

CLAIMS

1 (Canceled)

2. (Currently Amended) ~~The method of Claim 1~~ A method of storing an effective address (EA) in an effective to real address translation (ERAT) table supporting multiple page sizes including a base page size, wherein the ERAT table comprises a plurality of entries, the method comprising the steps of:

adding a plurality of page size indicator (PSI) fields to each entry of the ERAT table, wherein a PSI field is added for each unique page size, including the base page size, wherein the PSI fields of each entry are used to store values that collectively specify either: (i) one of the supported page sizes, or (ii) that an effective address stored in the same entry of the ERAT table does not need translation, and wherein at least one combination of the values of the PSI fields of each entry specifies that the effective address stored in the same entry does not need translation;

storing the EA in one of the entries of the ERAT table; and

setting the values of the PSI fields of the one of the entries of the ERAT table to specify

either: (i) a page size of the EA, wherein the page size of the EA is one of the supported page sizes, or (ii) that the EA does not need translation.

3 (Canceled)

4. (Currently Amended) ~~The method of Claim 3,~~ A method of storing an effective address (EA) in an effective to real address translation (ERAT) table supporting multiple page sizes including a base

page size and at least one other page size that is a multiple of 2 times the base page size and wherein the ERAT table comprises a plurality of entries, the method comprising the steps of:

adding a plurality of page size indicator (PSI) fields to each entry of the ERAT table,

wherein the PSI fields of each entry are used to store values that collectively specify either: (i) one of the supported page sizes, or (ii) that an effective address stored in the same entry of the ERAT table does not need translation, and wherein at least one combination of the values of the PSI fields of each entry specifies that the effective address stored in the same entry does not need translation;

storing the EA in one of the entries of the ERAT table; and

setting the values of the PSI fields of the one of the entries of the ERAT table to specify either: (i) a page size of the EA, wherein the page size of the EA is one of the supported page sizes, or (ii) that the EA does not need translation, wherein each entry of the ERAT table is also configured to store a plurality of state bits, and wherein all effective addresses that do not require translation and have the same state bits and share the same entry of the ERAT table.

5. (Canceled)

6. (Currently Amended) ~~The method of Claim 1,~~ A method of storing an effective address (EA) in an effective to real address translation (ERAT) table supporting multiple page sizes including a base page size, wherein the ERAT table comprises a plurality of entries, the method comprising the steps of:

adding a plurality of page size indicator (PSI) fields to each entry of the ERAT table,

wherein the PSI fields of each entry are used to store values that collectively specify

either: (i) one of the supported page sizes, or (ii) that an effective address stored in the same entry of the ERAT table does not need translation, and wherein at least one combination of the values of the PSI fields of each entry specifies that the effective address stored in the same entry does not need translation;

storing the EA in one of the entries of the ERAT table; and

setting the values of the PSI fields of the one of the entries of the ERAT table to specify

either: (i) a page size of the EA, wherein the page size of the EA is one of the supported page sizes, or (ii) that the EA does not need translation, wherein ($m+1$)

PSI fields are added to each entry of the ERAT table, and wherein m is an integer, and wherein m of the ($m+1$) PSI fields are used to store values that collectively specify one of the supported page sizes, and wherein the remaining one of the ($m+1$) PSI fields is used to store a value that specifies whether [[the]] an effective address stored in the same entry needs translation.

7. (Previously Presented) The method of Claim 6, wherein each of the ($m+1$) PSI fields added to each entry of the ERAT table is configured to store one binary digit.

8-34. (Canceled)